PCT
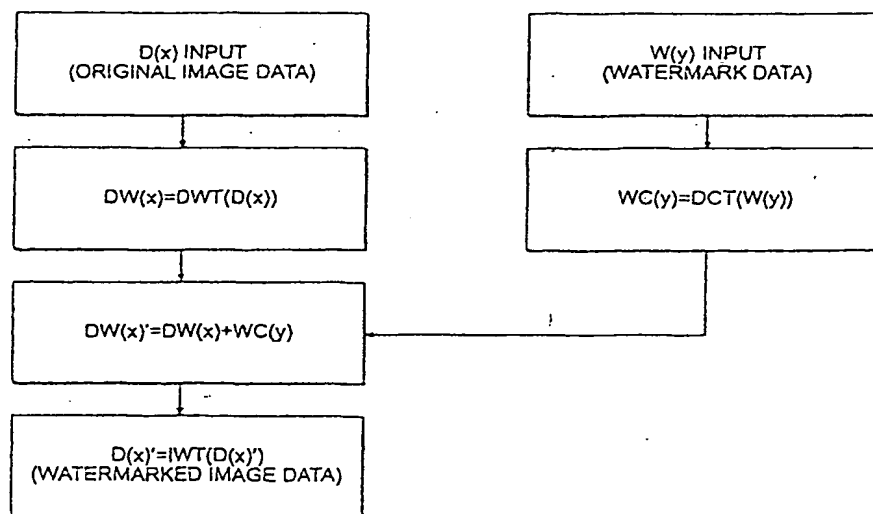
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(54) Title: WATERMARKING OF DIGITAL IMAGES USING WAVELET AND DISCRETE COSINE TRANSFORMS

(57) Abstract

The present invention relates to a method for embedding a watermark into a black and white or color digital image [D(x)]. Basically, the inventive method comprises the steps of transforming the digital image using a wavelet transform [WC(y)], transforming a watermark using discrete cosine transform (DCT), integrating the wavelet-transformed digital image with the DCT-transformed watermark [DW(x) + WC(y)] to insert the watermark into the image, and generating the watermarked image using inverse wavelet transform [D(x)']. For color images, RGB mode is converted into YIQ mode using a conversion matrix and the wavelet transform is applied to the Y-, I-, Q- values. This inventive digital watermarking of a color image is found to be highly robust against lossy compression and other image processing operations, compared to conventionally known methods which are known to be unsuitable for watermarking color images.